

Amendments to the Claims

Claims 1-35. (Canceled).

36. (Currently amended) A method for identifying a compound[[s]] that has[[ve]] the activity of inhibiting sister chromatid separation in eukaryotic cells, said method comprising:

- (a) incubating with a test compound a separin in the presence of a substrate for its proteolytic activity; and
- (b) determining the inhibiting effect of the test compound on the proteolytic activity of the separin,

thereby identifying a compound that has the activity of inhibiting sister chromatid separation in eukaryotic cells.

37. (Previously presented) The method of claim 36, wherein said eukaryotic cell is an animal cell.

38-39. (Canceled).

40. (Previously presented) The method of claim 36, which is high-throughput.

41. (Currently amended) The method of claim 36, wherein said separin protease is recombinant.

42. (Canceled).

43. (Currently amended) The method of claim 36, wherein said separin protease is human separin.

44. (Previously presented) The method of claim 36, wherein said substrate is a protein recombinantly produced in baculovirus in the presence of a phosphatase inhibitor.

45. (Canceled).

46. (Currently amended) The method of claim 36, wherein said substrate is human SCC1, or a fragment or [[of]] variant thereof that can be cleaved by separin or having a separin cleavage site.

47. (Currently amended) The method of claim 46, wherein said substrate is a polypeptide with the amino acid sequence of SEQ ID NO:1, or a cleavable fragment or variant thereof that can be cleaved by separin or having a separin cleavage site.

48. (Previously presented) The method of claim 36, wherein said substrate comprises a label which generates a detectable signal proportional to the amount of the cleavage product of the proteolytic activity, and wherein the signal is measured in the presence and in the absence of the test compound.

49. (Previously presented) The method of claim 48, wherein said label is fluorescent.

50-57. (Canceled).